REMARKS

STATUS OF THE APPLICATION

The Applicants wish to thank the Examiner for her clear explanation of the rejections in the non-Final Office Action dated April 06, 2005.

Claims 1-15 are pending in this application. Claims 1-15 have been rejected as unpatentable under 35 U.S.C. § 103(a).

RESPONSE TO REJECTION UNDER 35 U.S.C. § 103(A)

U. S. PATENT 6,423,794 TO GUAN, *ET AL.* AND WO 98/40420 TO KILLIAN, *ET AL.*

Claims 1-15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 6,423,794 to Guan, *et al.* (hereinafter "Guan") and WO 98/40420 to Killian, *et al.* (hereinafter "Killian").

The Examiner states that Guan teaches a process for ethylene polymerization process in the presence of a complex of formulas (VI)-(VIII), wherein T can be –CR^9CR^{10}-, R^2 can be a hydrocarbyl, R^{13} is a hydrocarbyl such as aryl or substituted aryl, and CR^{11} and CR^{12} can be hydrocarbyl or substituted hydrocarbyl.

According to the Examiner, it would therefore be obvious to a skilled artisan at the time the invention was made to employ Guan's teaching to-(i) prepare the ligand of the complex, (ii) prepare the complex catalyst, and (iii) prepare the ethylene polymer in the presence of such complex catalyst, because it is within the scope of Guan's teaching, especially in the absence of any showing of criticality and unexpected results.

The Examiner makes similar rejections over the teaching of Killian.

The Applicants respectfully disagree with the Examiner's reasoning of obviousness under 35 U.S.C. § 103(a) with reference to Guan and Killian.

Section 2142 of the MPEP indicates that a *prima facie* case of obviousness is established only when:

(1) all of the claim limitations are either taught, or suggested by the cited prior art;

(2) there is some suggestion or motivation to modify or combine the cited prior art references; AND

(3) there is a reasonable expectation of successfully producing the claimed invention via such a combination.

The second prong of the obviousness inquiry states that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings (See *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002)). Applicants respectfully submit that because the second prong of the obviousness inquiry is not satisfied by the Examiner's assertion, a *prima facie* case of obviousness is not established.

Specifically, neither Guan nor Killian specifically state that one form of the iminophosphines described should NOT have hydrogen atoms (or in other words, should have carbon atoms only) attached to the carbon atom (the "critical" carbon atom), that is attached to the phosphorous atom, i.e., the carbon atom in Formula (I) of the present application having R^3 and R^4 attached to it. Further, NONE of the specific iminophosphines shown in either of these references, for instance in those places pointed out by the examiner, have a structure in which the critical atom has two groups such as R^3 and R^4 attached to it.

Therefore, Applicants respectfully submit that the Examiner has not met her burden of proof in establishing a *prima facie* case of obviousness.

Even if the *prima facie* case of obviousness is established, the Applicants would like to rebut this presumption by pointing out (a) the unexpected and surprising results and (b) the "criticality" of the present invention. The Examiner has stated that these two factors are absent in the present application and therefore, the present invention is obvious and unpatentable over Guan and Killian.

As the Examiner points out, Guan and Killian teach that the iminophosphines may have hydrocarbyl substitution at certain positions of the catalyst ligand. The Applicants respectfully direct the Examiner's attention Comparative Example C and Example 34 of the present application. These two polymerizations are identical except for the fact that the iminophosphine used in Example 34 has two methyl

groups attached to the "critical" carbon atom, while the iminophosphine of Comparative Example C has one methyl group and one hydrogen atom attached to the critical carbon atom.

The difference is clearly seen in the molecular weights. Although the amounts of polymer produced in both examples are similar, the molecular weights of these polymers are very different. In Comparative Example C, using an iminophosphine taught by the two references, the number average molecular weight (M_n) of the resulting 'polymer' is found to be 1160 Da and the weight average molecular weight (M_w) is found to be 2440 Da. In comparison and contrast, in Example 34, using an iminophosphine of the present invention, the M_n of the resulting POLYMER is found to be 47,300 Da and the M_w was 67,600 Da.

Both the M_n and M_w of the polymers produced by the catalyst complexes of the present invention are well over 10 times higher than the M_n and M_w of the polymers produced in Comparative Example C. The higher molecular weight polyolefin is useful for injection molding or extrusion. But the lower molecular weight polyolefin is not useful for these purposes.

This is a surprising and an unexpected result, and could not have been predicted from the data or disclosures of either Guan or Killian. It illustrates the criticality that <u>both</u> R^3 and R^4 be hydrocarbyl or substituted hydrocarbyl to produce polyolefins of a desirable molecular weight for most purposes.

Thus, the Applicants respectfully submit that Guan or Killian do not render the claims of the present invention obvious.

CONCLUSION

In view of the above remarks, Applicants respectfully submit that stated grounds of rejection have been properly traversed, accommodated, or rendered moot and that a complete response has been made to the Office Action mailed April 06, 2005.

Therefore, Applicants believe that the application stands in condition for allowance with withdrawal of all grounds of rejection. A Notice of Allowance is respectfully solicited. If the Examiner has questions regarding the application or the contents of this response, the Examiner is invited to contact the undersigned at the number provided.

There are no fees due in accordance with this response. However, should a fee be due that is unaccounted for, please charge such fee to Deposit Account No. 04-1928 (E. I. du Pont de Nemours and Co.). . Furthermore, if any extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. §1.136(a), and any fees required therefore are hereby authorized to be charged to our Deposit Account No. 04-1928.

Respectfully Submitted,

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